

BA EN
WR ND
Mail Stop 60190

Initial	Date
CW	4-4-94
mm	4/19/94
AB	4/14/94
Caragga	4/1/94

Memorandum

APR 04 1994

To: Assistant Regional Director, Refuges and Wildlife
Attention: Ron Shupe

From: **ACTING** Regional Engineer, Region 6

Subject: 1993-1994 Annual Water Use Report/Management Plan

The subject report for Tewaukon National Wildlife Refuge has been reviewed and approved as submitted. We have revised the Water Use Report/Management Plan Short Form for Lake Elsie and Storm Lake and have forwarded them to the Refuge via cc:mail for future use. We suggest that the Manager consider displaying monthly pool elevations, capacities and surface acres in a table format.

Please extend our thanks to Refuge personnel for the timely submission of this report.

/s/ A.E. BEVILACQUA

bcc: EN rf
RO rf
EN:LCoE:3/9/94



United States Department of the Interior

FISH AND WILDLIFE SERVICE
TEWAUKON NATIONAL WILDLIFE REFUGE
RR #1, BOX 75
CAYUGA, NORTH DAKOTA 58013



MEMORANDUM

February 3, 1994

To: R&W, Associate Manager ND (60130)
Denver, CO

From: Refuge Manager, Tewaukon NWR Complex (62660)
Cayuga, ND

Subject: 1994 Annual Water Management Plan and 1993 Use Report

1. List of Water Rights

Declaration of Filing dated September 1, 1934, for Lake Tewaukon and East and West White Lake (including Cutler Marsh), 7,198 acre-feet storage, 4,251 acre-feet seasonal from Wild Rice River.

Declaration of Filing dated September 1, 1934 claimed 397 acre-feet storage and 312 acre-feet seasonal use for Clouds Lake (Pool 8) now called Hepi Lake. Listed on the same sheet as Lake Tewaukon/White Lake, as per RO(EN) Marshall Fox's 11-14-83 memo. Water use in pools 5 through 10 is covered under this right, with Hepi Lake to be drawn down to fill these pools.

Permit #1261: 4852 acre-feet storage and 2287 acre-feet seasonal use, for a total of 7139 acre-feet. This permit covers additional storage and seasonal use in Lake Tewaukon, Cutlers Marsh and West White Lake; 409 acre-feet seasonal use to replace water to be diverted from the watershed by Sargent County Water Conservation District project; and total storage and seasonal use for Pools 3 and 4. Priority date December 28, 1964.

Tewaukon NWR #1262: 1,130 acre-feet yearly (635 acre-feet storage and 495 acre-feet seasonal use) for Sprague Lake, dated December 28, 1964, diversion from an unnamed creek in the SE1/4NW1/4, Section 2.

Tewaukon NWR #1263: 686 acre-feet yearly for Mann Lake (236 acre-feet) and Horseshoe Slough (450 acre-feet) dated December 28, 1964, diversion from the Wild Rice River.

Tewaukon NWR #3816 Nickeson Tract: 571 acre-feet (474 acre-feet storage, 97 acre-feet annual use) for the Nickeson Bottoms, a tract jointly owned by the ND Game and Fish Department, US Bureau of Reclamation and USFWS. Diversion is from the Wild Rice River, W 1/2 Section 27, T. 130 N., LTL, R. 54 W. Priority date August 15, 1985.

2. Water Use - 1993

The Wild Rice River, LaBelle Creek, Frenier Dam Outlet and Sprague Lake Creek flowed well above average this year, exceeding management levels in all wetlands. The Wild Rice River continued a steady flow the entire year. It is believed that the cleaning of the Crete-Cogswell drain in 1984-85 plus over 19" of rain caused this increased flow in the Wild Rice River. Most wetlands on the Refuge were filled by the above normal runoff, and they held water into freeze-up.

Pool 1 (Lake Tewaukon): The lake was frozen at 1147.90 (1148.0 is full pool and virtually never is attained in the fall after a summer of evaporation loss). Inflow began on March 27, and rapid runoff from LaBelle Creek caused the spillway at the east end of Lake Tewaukon to be overtopped by about 1.5 feet. In order to test the new vegetated spillway constructed in 1988, Lake Tewaukon was raised to an elevation of 1149.50 on July 18. After five days of running water over the spillway, two boards were pulled in each bay. On July 27, outflow peaked at 1149.92 and a full pool was maintained.

Parker Bay (east end of Lake Tewaukon): Inflow from LaBelle Creek was diverted into Parker's Bay to raise the water level to benefit waterfowl, and to take pressure off the East Dike of Lake Tewaukon. Maximum depth for Parker Bay was about 4 feet this year.

Pool 2 (Cutler Marsh): This pool was very low (almost dry) but filled rapidly due to flooding. It reached 1153.84 on July 27 and remained above operating level the entire year. At freeze-up the level of this pool was 1152.17.

Pool 2A: 2A was dry and filled to a depth of 8 feet with spring runoff. At freeze-up depth was 6 feet.

Pool 3 (Maka Pool): This pool was at about 1153.8 when spring runoff began and was passing water on March 27. It peaked at 1158.7 on July 25 and was above operating level throughout the year. At freeze-up the level of this pool was 1156.20.

Pool 3A: This pool is filled to the same level as Pool 3 and remained that way all year. Muskrat work was noticed in this pool and others for the first time in 5 years. The establishing population should open up the rank cattail stands.

Pool 4 (River Pool): This pool was dry but filled rapidly due to the flooding and over-topped the dike on July 25. Several boards were pulled to keep the flow from washing around the dam and prevented severe washing of the township road. The pool began slowly dropping and went into freeze-up at 1160.03.

Pool 5, 5A, 6, 7, 7A: All pools started very dry but rapidly filled during the rapid runoff. All remained full throughout the year.

Pool 8 (Hepi Lake): Heavy inflow overfilled this unit, and all but one of our duck and goose nesting structures were close to overtopping. A maximum depth of 6.00 feet was reached on April 20. The desired management level of about 2.5 feet was never obtained, as Pool 8 went into freeze-up at 6.0 feet deep.

Pool 10: This pool was dry, but we were able to back water out of Hepi Lake. Maximum depth was 6 feet in the center and 2 feet around the edge. Several duck and goose broods were seen in this pool.

Pool 11 (West White Lake): This unit was full all year. Openings created during the winter of 1989 by scraping cattails with the payloader remained open all year providing very good habitat. This was one of the best pools for waterfowl in 1994. Several days of pumping this pool into Pool 12 was necessary to prevent County Road 5 from being flooded.

Pool 12 (East White Lake): Waterfowl loafing and brood use were excellent this year, however, rain and pumping from Pool 11 caused us to have 6-8 feet of water at freeze-up.

Pool 13 (Mann Lake): This pool held at 6 feet of water in 1992. It held about 8 feet of water at freeze-up and was heavily used by ducks all year.

Pool 14 (Sprague Lake): This spring it was approximately 6 feet deep, but heavy inflows caused it to breach its bank and flood a township road. High water allowed us to fill several wetlands, but it also caused severe bank and dike erosion. The outlet channel does not allow the flow to be passed quickly enough. Freeze-up occurred at a depth of 9.1 feet.

Pool 16 (Horseshoe Slough Group): Thanks to the heavy flows in the Wild Rice River and Sprague Lake Creek, water was gravity flowed to fill this group of 8 wetlands (244 wet acres) completely. All pools provided excellent waterfowl habitat.

3. Impoundment Data

Please see the attached chart for capacities for each pool at various elevations. No formal inflow/outflow records were maintained. Please see Section #2 above for elevation changes for the various pools.

4. 1994 Plans

Pool 1 (Lake Tewaukon): Fill to about 1149.0 MSL to allow flow into adjacent dry wetlands on the Krause WPA, Tewaukon WMA, and the Refuge. After these wetlands have received adequate water, the lake will be lowered to the maximum management level of 1148.0 MSL for sport fishery habitat.

Parker Bay (east end of Lake Tewaukon): Maintain a maximum of four feet as early as possible in the spring before duck nesting occurs. Maintain a 2-1/2 - 3 foot depth for waterfowl production by adding water as needed in late spring and summer.

Pool 2 (Cutler Marsh): Try and maintain the pool at 1151.5 MSL to flood dense cattails in the west end without killing vegetation in the lower end. When the water temperatures are correct, small amounts of water will be released in May-August to help commercial fishermen net carp.

Pool 3 (Maka Pool): Maintain pool at 1156.2 and stabilize as quickly as possible before over-water duck nesting is initiated. If needed, supply water to Pools 2A and 3A. Hold water at maximum depth to slow cattail invasion.

Nickeson Bottoms: Using evaporation, draw down to approximately 4 feet as quickly as possible. Maintain this depth to continue cattail control and encourage establishment of a muskrat population. Muskrats will further aid in cattail control and their lodges will provide waterfowl nesting and loafing sites.

Pool 4 (River Pool): Draw down to 1159.5 and maintain to retard cattail invasion and maintain muskrat populations.

Pools 2A, 3A, 5, 5A, 6, 7, 7A: If possible, fill to maximum depth to flood cattails.

Pool 8 (Hepi Lake): Initially 5-6 feet of water may be needed to supply Pools 7A, 7, 6, 5A, 5, 3A, and 2A downstream. Draw the pool down to 4 feet as soon as possible to maintain cattail and bulrush stands.

Pool 9: If possible keep water out of this pool and allow it to dry up. Drying will allow some cattails to reestablish.

Pool 10: Allow this pool to fill naturally or open the supply ditch control and flood to a maximum of 2-1/2 feet. This wetland should be maintained at this level; over-filling would probably flood out the excellent stand of bulrush. It should be allowed to go dry by late August to maintain its highest use as a semi-permanent wetland.

Pool 11 (West White Lake): Maintain depth at 4 - 4-1/2 feet to slow cattail invasion. If necessary pump water from Pool 12 to keep from flooding County Road 5.

Pool 12 (East White Lake): Add no water to this pool. Allow gradual drying to reestablish cattails.

Pool 13 (Mann Lake): Add no water to this pool at 8 feet deep. We are above optimum operating level.

Pool 14 (Sprague Lake): Maintain maximum pool, about 8-1/2 to 9 feet in order to maintain the sport fishery.

Pool 16 (Horseshoe Slough): Gravity flow water from the Wild Rice River to fill all pools. Pool A should attain the level of 1207.5 MSL and all others about 1206 MSL.

5. Location Map

Please see Section #2 for the revised Refuge Map on which all management pools are marked.

Fred G. Giese

Fred G. Giese

Attachments

TEWAUKON NATIONAL WILDLIFE REFUGE
Pools, Elevations and Acres

12/12/85

Pool 1 - Tewaukon	1149	1015
- Parker's Bay	1149	95
Pool 2 - Cutler's Marsh	1152	246
Pool 2A		30
Pool 3 - Maka Pool	1156	125
Pool 3A		18
Pool 4 - River Pool	1159	108
Pool 5	1160	6
Pool 5A		5
Pool 6	1165	6
Pool 7	1178	21
Pool 7A		106
Pool 8 - Hepi Lake	1179	106
Pool 9	1167	10
Pool 10	1173	5.5
Pool 11 - W. White Lake	1151	80
Pool 12 - E. White Lake	1147	103
Pool 13 - Mann Lake	1207	57
Pool 14 - Sprague Lake	1209	186

Pool 16 - Horseshoe Slough		244
Pool 1	1210	119.7
Pool 2	1206	42.5
Pool 3	1206	10.3
Pool 4	1206	30.3+
Pool 5	1206	24.5
Pool 6	1206	2.8+
Pool 7	1206	14.5

WATER USE REPORT/
MANAGEMENT PLAN
SHORT FORM

Lake Elsie NWR, Richland County
Station Name

Summer, 1992 (date not recorded)
Date Of Inspection

Declaration of Filing: 8/30/37
Water Right No.

Considerable local runoff, at least
Source(s) two drainage ditches
springs

Several

(522 acre-feet storage)

(900 acre-feet seasonal)

Water Diverted: Yes___ No X

Means of Diversion None
Rate_____

*Impoundment(s): Yes___ No X

Water Level 522 acre-feet
(Elevation or Est. Storage Amount)

*Well(s):

Free Flowing none-known gpm

Pumped_____ gpm

Type of Use:

Surface Irrigation_____

(Crop)_____

Fish & Wildlife XX

Stock_____

Domestic_____

Other high public use: swimming
water skiing, fishing

Over Climatic Conditions: 1993 was wet. Lake was full.

Condition of Facilities: No facilities present.

Proposed Water Program: None, no water management capability is present. At maximum the lake spills north through a (damaged) culvert.

Comments: The lake is an extremely popular summer recreational area. The Richland County Commissioners, Richland County Wildlife Club and the North Dakota Game and Fish are looking at a project that would include raising the bridge and county road, provide a fishing bridge, build a carp trapping area and the possibility of a walleye rearing pond.

Fred G. Giese 2/4/94
Fred G. Giese, Refuge Manager Date

*If more than one impoundment or well, please attach additional sheet.

WATER USE REPORT/
MANAGEMENT PLAN
SHORT FORM

Storm Lake NWR, Sargent County
Station Name

Declaration of Filing: 8/30/37
Water Right No.

Several
(522 acre-feet storage)
(900 acre-feet seasonal)
Water Diverted: Yes _____ No X

*Impoundment(s): Yes _____ No X

*Well(s):
Free Flowing none gpm
Pumped _____ gpm

June, 1993
Date Of Inspection

Drainage ditch (legal)
Source(s)

Means of Diversion Uncontrolled
Rate Unknown

Water Level est 654 acre-feet
(Elevation or Est. Storage Amount)

Type of Use:
Surface Irrigation _____
(Crop) _____
Fish & Wildlife X Virtually no
Stock _____ public use
Domestic _____
Other _____

Over Climatic Conditions: 1993 was wet.

Condition of Facilities: A diversion dam at the head of the feed ditch serving Storm Lake washed out well before 1976. Apparently someone decided it wasn't worth repairing.

Proposed Water Program: No water management capability is present. Water runs down the ditch into the lake to an unknown degree each spring. Water did fill Storm Lake in 1993.

Comments: The lake serves as an excellent waterfowl loafing sanctuary with good use by snow geese, canvasbacks, redheads, lesser scaup, and tundra swans. Water levels fluctuate on their own. If active management was initiated, some degree of improvement might be gained by a cycle of drawdown management. It is questionable if the benefits would be worth the costs for Storm Lake alone. However, when you look at the other three wetlands to the south we should continue to work with Ducks Unlimited and put the Mini Joint Venture back on tract. The Golf Course Association of Milnor has been very quiet in their request to use lake water to irrigate portions of the Storm Lake Golf course. The Association was granted a conditional water right, junior to that of the FWS. The Golf Course Association is now looking into doing some new landscaping and has contacted us about the possibility of doing some cosmetic changes on the feeder ditch.

Fred G. Giese 2/4/94
Fred G. Giese, Refuge Manager Date

*If more than one impoundment or well, please attach additional sheet.

TEWAUKON NWR



